

Fortinet

Services Appliance

Installation Guide for SA200, SA250 and SA2000



882-80030 Revision A Services Appliance Ver 1

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1

Services Appliance

Fortinet **Services Appliance**:

- [“Services Appliance - SA200” on page 3](#)
- [“Services Appliance - SA250” on page 7](#)
- [“Services Appliance - SA2000” on page 13](#)

The hardware devices are shipped with Fortinet software applications installed on them that run on each of the appliances. This guide describes how to physically install the Services Appliance for operation.

Services Appliance - SA200

This section elaborates the steps to be followed while installing the **SA200 Services Appliance**. The following are the sections:

- [“Services Appliance Features” on page 3](#)
- [“Services Appliance Package” on page 4](#)
- [“Powering Off the SA200” on page 5](#)
- [“Steps for Installation - SA200” on page 5](#)

Services Appliance Features

Network Manager operates from the SA200 Services Appliance.

Feature	SA200
Maximum number of controllers supported	10
RAM	2 GB
Mounting requirement	1U rack
Hard disks	1 x 160 GB

Feature	SA200
USB connectors	2
Cable provided	RJ45 connector on one end and a DB9 female on the other

See the illustrations below for physical details of SA200 Services Appliance.

Figure 1: SA200 Services Appliance (Front view)

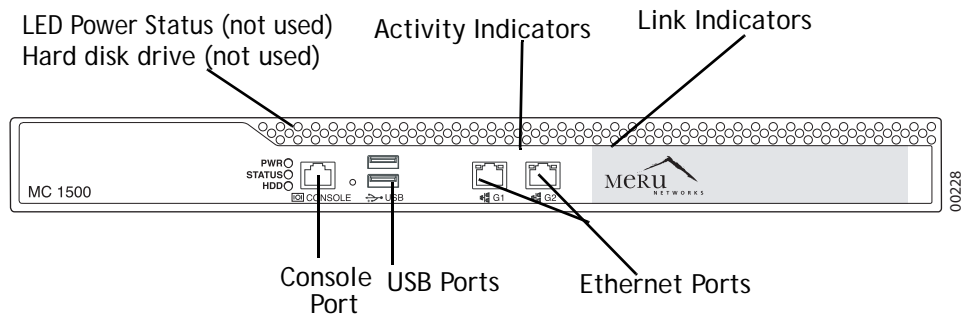
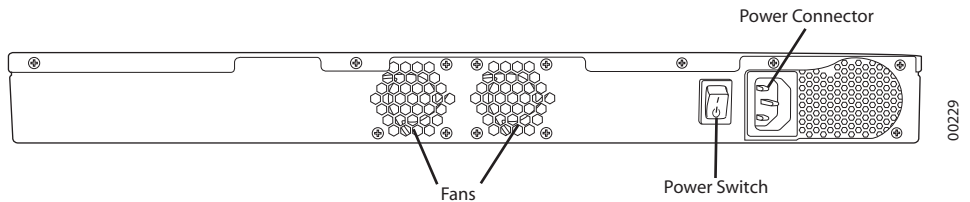


Figure 2: SA200 Services Appliance (Back view)



Services Appliance Package

Included in the Box

The Services Appliance package consists of the following, in addition to this guide:

- Services Appliance with application software installed
- Two Ethernet cables (you will use only one of them)
- Documentation disk for the application loaded on the Services Appliance
- Console cable. SA200 has a DB9 female connector on one end and an RJ45 on the other.
- One power cable for SA200
- Rack mounting ears with 6 screws
- Four rubber feet

- Entitlement Certificate for licensing

You Also Need

- A computer with either Windows Internet Explorer or Mozilla Firefox, and a serial terminal program, running at 115200 baud, 8 bits, no parity, and 1 stop bit (115200 8N1).
- If you are rack mounting the unit, rack screws for your rack
- Phillips head screwdriver
- You might need a serial adapter for your laptop if the laptop doesn't have a serial connection.
- Ethernet switch and cable
- AC power outlet(s) for the Services Appliance

Powering Off the SA200

Should it become necessary to power off the server, use the CLI command **poweroff nms-server** before switching the server off with the **Power On/Off** switch. This command gracefully brings the server down to a state where the power switch can be unplugged.



Failure to use the **poweroff nms-server** command before removing power from the controller can cause Flash card corruption and result in the server becoming non-operational.

Steps for Installation - SA200

The Software is pre-installed on the flash drive of the Services Appliance before it is shipped. The Services Appliance hardware must be installed on the network by following these steps:

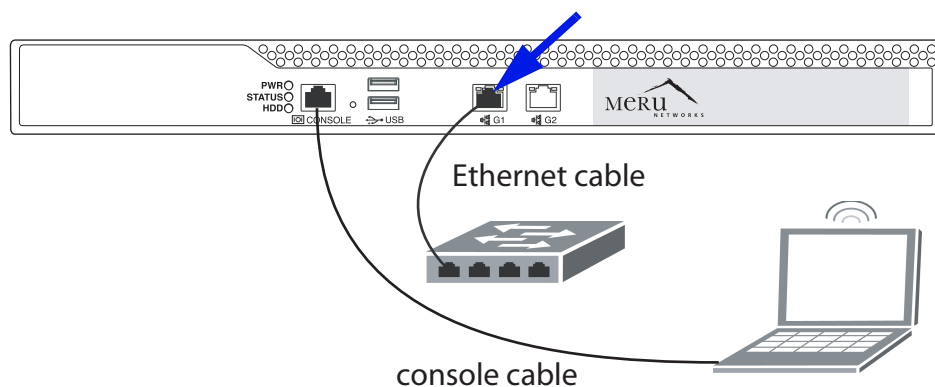
1. If you are rack mounting the unit, attach the ears and then install the unit in a rack.
2. Ground yourself.
3. Connect the (SA200) power cable to the Services Appliance and plug them into outlets. The power light should go on.
4. Connect the Ethernet cable from the Ethernet port on the Services Appliance to a switch or router. The Services Appliances consists of two Ethernet ports; **G1** and **G2**. Use the left most **G1** Ethernet port.



Only the left most G1 Ethernet port is operational.

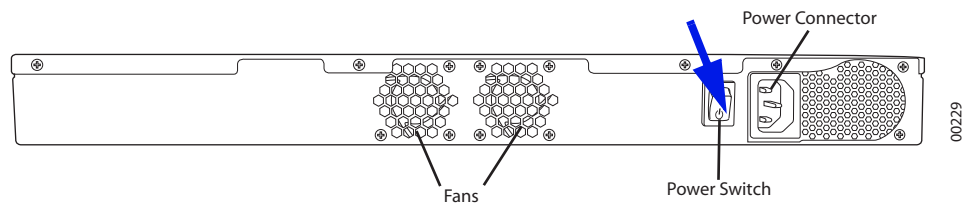
5. Using the provided console cable, connect a PC (with terminal emulation software) to the Services Appliance.

Figure 3: Connecting SA200



6. From the PC terminal emulation program (Hyperterminal, Minicom, etc.), set the software configuration as follows:
 - Baud rate: 115200
 - Data Bits: 8
 - Parity: None
 - Stop Bits: 1
 - Flow Control: None
7. Turn on the Services Appliance power.

Figure 4: Power Button on SA200 Back view



8. Watch the boot sequence on the PC. When the login prompt appears, you are connected.
9. Log on with the default name and password:

```
admin
admin
```

10. Run the `setup` command through the command line interface. The `setup` command lists the following parameters of the services appliance to be configured:

- host name
- admin password
- guest password



By default, the services appliance IP address is configured to DHCP.

-
- To configure networking, select the option `yes` to modify the network settings.
 - Select the option `yes` to configure the *DHCP* Addressing and option `no` to configure the *Static* Addressing. The following parameters of the services appliance must be configured for static addressing:
 - IP address
 - netmask
 - default gateway (IP)
 - DNS server
 - DNS domain
 - Time zone settings
 - Synchronize the time with the NTP (Network Time Protocol) server.



Make a note of the IP address before the system rebooted.

11. When asked if you want to commit the settings and reboot, answer `yes`. The system is rebooted.

12. See the *IP address* using the `show nms` command.

Setup is now complete.

Services Appliance - SA250

This section elaborates the steps to be followed while installing the **SA250 Services Appliance**. The following are the sections:

- [“Services Appliance Features” on page 8](#)
- [“Services Appliance Package” on page 9](#)
- [“SA250 LED Status Indicators” on page 10](#)

- [“Powering Off the SA250” on page 11](#)
- [“Steps for Installation - SA250” on page 11](#)

Services Appliance Features

Network Manager operates from the SA250 Services Appliance.

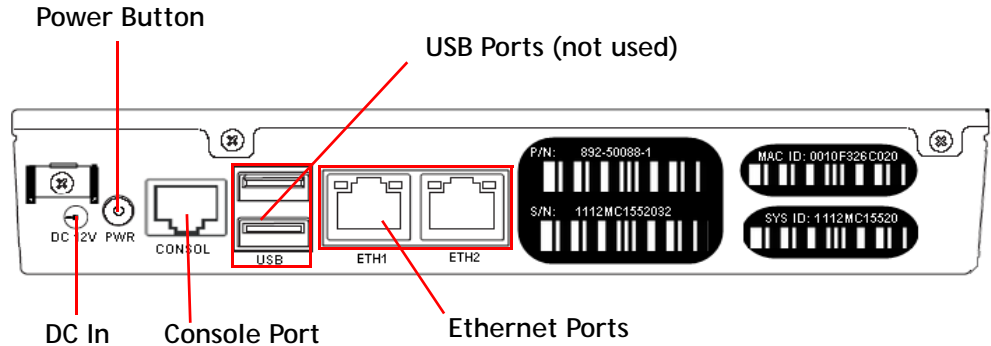
Feature	SA250
Maximum number of Fortinet controllers supported	10
RAM	2 GB
Mounting requirement	1U rack
Hard disks	1 x 250 GB
USB connectors	2
Cable provided	RJ45 connector on one end and a DB9 female on the other

See the illustrations below for physical details of SA250 Services Appliance.

Figure 5: SA250 Services Appliance (Front view)



Figure 6: SA250 Services Appliance (Back view)



Services Appliance Package

Included in the Box

The Services Appliance package consists of the following, in addition to this guide:

- Services Appliance with application software installed.
- Two Ethernet cables (you will use only one of them)
- Documentation disk for the application loaded on the Services Appliance
- Console cable. SA250 has a DB9 female connector on one end and RJ-45 console cable (Note that this cable is different from the one used for other Fortinet controllers.)
- AC to DC adapter. This is for use only with MC1550 and SA250. It is not for use with any other Fortinet Networks product or other brands of equipment.
 - AC input 100-240V, 50-60Hz, 1.3A
 - DC input 12V, 3.75A (45W max)
- One power cable for SA250
- Rack mounting ears with 6 screws
- Four rubber feet
- Entitlement Certificate for licensing

You Also Need

- A computer with either Windows Internet Explorer or Mozilla Firefox, and a serial terminal program, running at 115200 baud, 8 bits, no parity, and 1 stop bit (115200 8N1).
- If you are rack mounting the unit, rack screws for your rack
- Phillips head screwdriver
- You might need a serial adapter for your laptop if the laptop doesn't have a serial connection.

- Ethernet switch and 2 Ethernet cables
- AC power outlet(s) for the Services Appliance

Check Ethernet LED Status Indicators

The RJ-45 connector provides information about the Ethernet connection.

Figure 7: *RJ-45 Status Indicators*

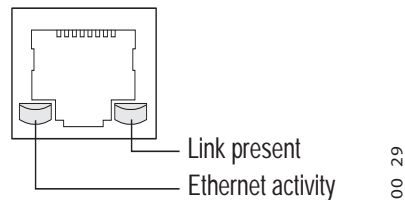


Table 1: *Ethernet Status Information*

LED	Activity	Description
Link Present	Green solid	Network connection
	Yellow blinking	Network activity
Ethernet Activity	Off	10 Mbps
	Yellow	100 Mbps
	Green	1000 Mbps

SA250 LED Status Indicators

Monitor the status of the services appliance and the Ethernet connection using the various LED status indicators, located on the front of the chassis.

The services appliance provides several LED status indicators: two on the front (as shown in [Figure 5 on page 8](#)) and one power indicator on the rear. The descriptions of the LED states are shown in the following table.

Table 2: SA250 LED Status Information

LED	Color	Description
Power (front)	Unlit	Unit is off
	Blue (solid)	Unit is on, power is good
Power (rear)	Unlit	No power supplied
	Red (solid)	AC power is applied but DC power is down
	Blue (solid)	DC power is applied
Status	Unlit	No activity
	Blue (blinking)	Read/Write activity on hard drive or flash

Powering Off the SA250

Should it become necessary to power off the server, use the CLI command **poweroff nms-server** before switching the server off with the **Power On/Off** switch. This command gracefully brings the server down to a state where the power switch can be unplugged.



Failure to use the poweroff nms-server command before removing power from the controller can cause Flash card corruption and result in the server becoming non-operational.

Steps for Installation - SA250

The Software is pre-installed on the flash drive of the Services Appliance before it is shipped. The Services Appliance hardware must be installed on the network by following these steps:

1. If you are rack mounting the unit, attach the ears and then install the unit in a rack.
2. Ground yourself.
3. Connect the (SA250) power cable to the Services Appliance and plug them into outlets. The power light should go on.

4. Connect the Ethernet cable from the Ethernet port on the Services Appliance to a switch or router. The Services Appliances consists of two Ethernet ports; **ETH1** and **ETH2**. Use the left most **ETH1** Ethernet port.



Only the left most ETH1 Ethernet port is operational.

5. Using the provided console cable, connect a PC (with terminal emulation software) to the Services Appliance.
6. From the PC terminal emulation program (Hyperterminal, Minicom, etc.), set the software configuration as follows:
 - Baud rate: 115200
 - Data Bits: 8
 - Parity: None
 - Stop Bits: 1
 - Flow Control: None
7. Turn on the Services Appliance power.
8. Watch the boot sequence on the PC. When the login prompt appears, you are connected.
9. Log on with the default name and password:
admin
admin
10. Run the `setup` command through the command line interface. The `setup` command lists the following parameters of the services appliance to be configured:
 - host name
 - admin password
 - guest password



By default, the services appliance IP address is configured to DHCP.

- To configure networking, select the option yes to modify the network settings.
- Select the option yes to configure the *DHCP* Addressing and option no to configure the *Static* Addressing. The following parameters of the services appliance must be configured for static addressing:
 - IP address
 - netmask
 - default gateway (IP)

- DNS server
- DNS domain
- Time zone settings
- Synchronize the time with the NTP (Network Time Protocol) server.



Make a note of the IP address before the system rebooted.

11. When asked if you want to commit the settings and reboot, answer yes. The system is rebooted.

12. See the *IP address* using the `show nms` command.

Setup is now complete.

Services Appliance - SA2000

This section elaborates on the steps to be followed while installing the **SA2000 Services Appliance**.

The following are the sections:

- [“Services Appliance Features” on page 13](#)
- [“Services Appliance Package” on page 14](#)
- [“SA2000 LED Status Indicators” on page 15](#)
- [“Powering Off the SA2000” on page 15](#)
- [“Steps for Installation - SA2000” on page 16](#)
- [“Replace SA2000 Hard Disk” on page 17](#)

Services Appliance Features

The Network Manager operates from the SA2000 Fortinet Services Appliance.

Feature	SA2000
Maximum number of Fortinet controllers supported	250
RAM	8 GB DDR3
Mounting requirement	1U rack
Hard disks	2 x 500 GB RAID

Feature	SA2000
USB connectors	2 Front Mounted
Cable provided	Serial to Ethernet Console cable

See the illustrations below for physical details of the SA2000 Services Appliance.

Figure 8: SA2000 Services Appliance (Front view)

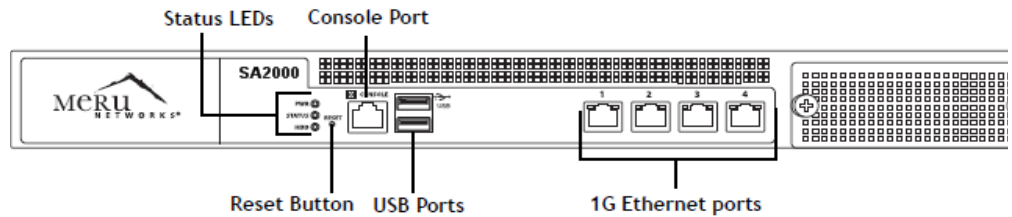
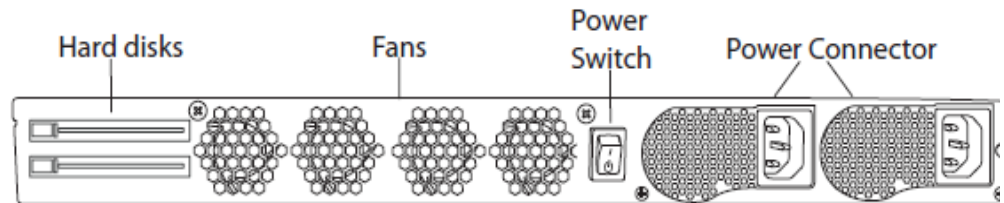


Figure 9: SA2000 Services Appliance (Back view)



Services Appliance Package

Included in the Box

The Services Appliance package consists the following in addition to this guide:

- Services Appliance with application software installed
- Two Ethernet cables (you will use only one of them)
- Documentation disk for the application loaded on the Services Appliance
- Console cable
- Two power cables
- Rack mounting ears with 6 screws
- Four rubber feet
- Entitlement Certificate for licensing

You Also Need

- A computer with either Windows Internet Explorer or Mozilla Firefox, and a serial terminal program, running at 115200 baud, 8 bits, no parity, and 1 stop bit (115200 8N1).
- If you are rack mounting the unit, rack screws for your rack
- Phillips head screwdriver
- You might need a serial adapter for your laptop if the laptop does not consist a serial connection.
- Ethernet switch and cable
- AC power outlet(s) for the Services Appliance

SA2000 LED Status Indicators

Monitor the status of the SA2000 and the Ethernet connection using the various LED status indicators, located on the front of the chassis. The SA2000 status indicator LEDs are located on the front of the chassis, as shown [Figure 8 on page 14](#). The description of the LED states are shown in the following tables.

Table 3: SA2000 LED Status Information

LED	Color	Description
Power	unlit green solid	Unit is off Unit is on, power is good
Status	-----not used-----	
HDD	unlit amber flashing	This LED flashes amber when flash and/or hard drive is accessed. It flashes during bootup, shutdown, login, and configuration checks.

Powering Off the SA2000

Should it become necessary to power off the server, use the CLI command **poweroff nms-server** before switching the server off with the **Power On/Off** switch. This command gracefully brings the server down to a state where the power switch can be unplugged.



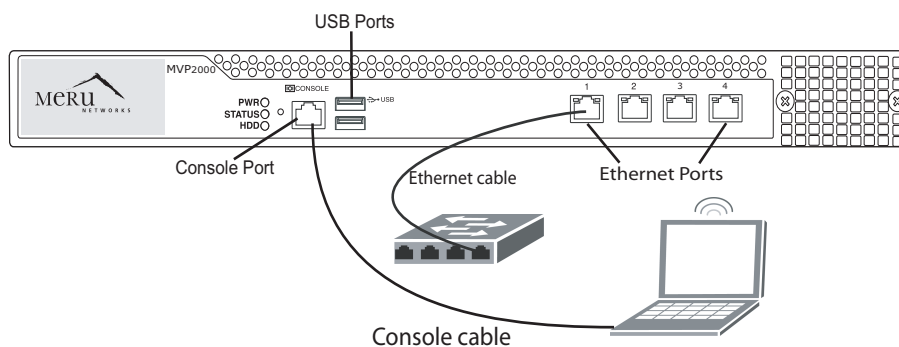
Failure to use the poweroff nms-server command before removing power from the controller can cause Flash card corruption and result in the server becoming non-operational.

Steps for Installation - SA2000

The Software is pre-installed on the flash drive of the Services Appliance before it is shipped. The Services Appliance hardware must be installed on the network by following these steps:

1. If you are rack mounting the unit, attach the ears and then install the unit in a rack.
2. Ground yourself.
3. Connect two (SA2000) power cables to the Services Appliance and plug them into outlets. The power light should go on.
4. Connect the Ethernet cable in between one of the front facing Ethernet ports to switch or router.
5. Using the provided console cable, connect a PC (with terminal emulation software) to the Services Appliance (see [Figure 10 on page 16](#)).

Figure 10: Connecting SA2000



6. From the PC terminal emulation program (Hyperterminal, Minicom, etc.), set the software configuration as follows:
 - Baud rate: 115200
 - Data Bits: 8
 - Parity: None
 - Stop Bits: 1
 - Flow Control: None
7. Turn on the Services Appliance power. For SA2000, ensure to turn on power switch on the back of the unit *and* the power button on the front. If only one SA2000 switch is turned on, you hear an audible alarm and the I/O LED on the front of the unit turns red.
8. Watch the boot sequence on the PC. When the login prompt appears, you are connected.
9. Log on with the default name and password:
admin
admin

10. Run the `setup` command through the command line interface. The `setup` command lists the following parameters of the services appliance to be configured:

- host name
- admin password
- guest password



By default, the services appliance IP address is configured to DHCP.

-
- To configure networking, select the option `yes` to modify the network settings.
 - Select the option `yes` to configure the *DHCP* Addressing and option `no` to configure the *Static* Addressing. The following parameters of the services appliance must be configured for static addressing:
 - IP address
 - netmask
 - default gateway (IP)
 - DNS server
 - DNS domain
 - Time zone settings
 - Synchronize the time with the NTP (Network Time Protocol) server.



Make a note of the IP address before the system rebooted.

11. When asked if you want to commit the settings and reboot, answer `yes`. The system is rebooted.

12. See the *IP address* using the `show nms` command.

Setup is now complete.

Replace SA2000 Hard Disk

The SA2000 uses two disks in a RAID configuration. If you need to replace one of the hard disks for any reason, follow these steps:

1. From IOS CLI, enter the following command:

```
raid replace <lower/upper>
```

2. Power off the SA2000 appliance.

3. Replace the failed hard drive with the initialized replacement drive.

4. Start the SA2000 appliance.


The appliance boots up and the RAID starts in resync mode without any data loss.

Services Appliance EIP Tables

Figure 11: SA2000 EIP Table

有毒有害物质声明 (EIP表)
Hazardous Substance Declaration (EIP table)

Products: MC3200, MC4200, SA2000

部件名称 Item	<div>有毒有害物质或元素的名称及含量 Toxic or Hazardous Substances or Elements</div>					
	铅 Pb	汞 Hg	镉 Cd	六价铬 Cr ⁶⁺	多溴联苯 PBB	多溴联苯醚 PBDE
印刷电路板组件 Printed Circuit Board Assemblies (PCBA)	X	O	O	O	O	O
配件包 Packing of parts	X	O	O	O	O	O
交换式电源供应器(适配器) /外接式交换式电源供应器(适配器) Power Supply/Adapter	X	O	O	O	O	O

- O: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006 标准规定的限量要求以下。
O: Indicates all homogeneous materials hazardous substances content are below the SJ/T 11363-2006 MCV limit.
- X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006 标准规定的限量要求。
X :Indicates that the hazardous substance content contained in any one of the homogeneous materials of the part exceeded the MCV limits specified in the Standard SJ/T 11363-2006.

Figure 12: SA250 EIP Table

有毒有害物质声明 (EIP 表)
Hazardous Substance Declaration (EIP table)

Products: MC1550, SA250

部件名称 Item	 有毒有害物质或元素的名称及含量 Toxic or Hazardous Substances or Elements					
	铅 Pb	汞 Hg	镉 Cd	六价铬 Cr ^{VI}	多溴联苯 PBB	多溴联苯醚 PBDE
机构材料-机箱/面板 Mech. Parts - Chassis / panel	○	○	○	○	X	X
机构材料-铁件/螺丝及其他 Mech. Parts - Metal bracket / Screws etc.	○	○	○	○	X	X
机构材料-散热片 Mech. Parts - Heatsink	○	○	○	○	X	X
机板 PCBA board	○	○	○	○	○	○
电池 Battery	○	○	○	○	○	○
线材 Cable	○	○	○	○	○	○
硬盘 HDD	○	○	○	○	○	○
驱动光盘 Driver CD	○	○	○	○	○	○
纸箱 Carton	○	○	○	○	○	○
缓冲包材/塑料袋 EPE / bag	○	○	○	○	○	○
电源供应器 Power Adapter	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006 标准规定的限量要求以下。

○: Indicates all homogeneous materials hazardous substances content are below the SJ/T 11363-2006 MCV limit.

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006 标准规定的限量要求。

X :Indicates that the hazardous substance content contained in any one of the homogeneous materials of the part exceeded the MCV limits specified in the Standard SJ/T 11363-2006.

2

Licensing

Configure Licensing

Your Services Appliance box includes an Entitlement Certificate with a number that you will need to get a license file. Identify that paper certificate and then follow these directions to configure your license:

1. Log on to **www.merunetworks.com/license**.
2. Provide the requested information, including the number from the Entitlement Certificate.
3. When you get an email with the license file, save the license file.
4. Apply the Network Manager license to your Services Appliance by following the below mentioned steps:
 - Select *Administration > System Administration > License*. On the **License** screen, select *Upload License*.
 - Choose the **.lic** file to upload the license and click **Open**.
 - Only single license file can be uploaded. Multiple license files in one upload operation/session is not permitted.
5. Select **Upload** to upload the license key file. The file gets uploaded and is displayed on the License Details section.

Where Do I Go From Here?

Once you are set up, proceed to the *User Guide* for your Fortinet application and follow the directions for configuring the software pre-installed on your appliance.



Fortinet has tested up to 20 administrators logged onto SA200.



If you ever need to re-initialize a services appliance to its default configuration and restart setup, enter these two CLI commands:

```
reinitialize database  
setup
```
